

## The Development of Thermalism in the Far East

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In Japan, due to its geological and topographical nature of the country, there are a lot of active volcanoes, mineral and hot springs all over the country. There are about 27,000 hot spring sources and 3,100 spa stations. The spring waters are defined as natural spring waters with temperatures over 25 °C and/or the evaporated residual amount from 1 kg spring water is over 1,000mg and/or contain any one of 18 chemical elements, mainly minerals, in amounts exceeding the fixed minimum values. Water temperatures of hot springs are generally high and are over 42 °C in more than half of them. The most abundant characteristics of the springs are those so-called simple thermals (25 °C ≤, no significant amounts of minerals) and sodium chloride thermals, which account for more than half of hot springs in Japan.

Thermalism in Japan has been developed under these conditions. These natural hot springs have been utilized for relaxation and for medical purposes since ancient times, principally in the same ways as in many European countries. In former times, Japanese people had the custom of staying in spa stations as their traditional folk medicine for 3-4 weeks (Tohji). Nowadays, modern medical balneotherapy can be conducted under physicians' control for outpatients or hospitalized patients as "cure treatment". The term "cure treatment" is derived from "Kurbehandlung" in German, meaning taking medical balneotherapy during long-term staying in spa station for 3-6 weeks. This cure treatment is comprised of not only frequent taking baths but also other therapeutical maneuvers such as various hydrotherapies, physical therapies, exercise, diet therapy and so on. In contrast to European countries, specific therapeutical means like drinking cure, mud therapy, inhalation, steam douche as well as climotherapy, terrain exercise therapy, thalassotherapy are not popular in Japan.

Although many scientific documents showing beneficial effects and usefulness of balneotherapy have been published, social securities have paid no attention to balneotherapy. A flat cover-all payment system for balneotherapy does not exist in Japan.

Recently, hot springs have been utilized for the purpose of health promotion especially for the elderly. It is reported that medical expenses for the elderly decreased in those people participated in health promotion programs with hot spring bathing.

Our research work concerning physiological and biochemical changes after balneotherapy and the analysis of balneotherapy using computerized methods will be discussed.